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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/594,175	09/26/2006	Tetsuhiro Iida	1110/98318	7754
24628	7590	12/04/2007		
WELSH & KATZ, LTD 120 S RIVERSIDE PLAZA 22ND FLOOR CHICAGO, IL 60606			EXAMINER HITESHEW, FELISA CARLA	
			ART UNIT 1792	PAPER NUMBER
			MAIL DATE 12/04/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/594,175

Applicant(s)

IIDA ET AL.

Examiner

Felisa C. Hiteshew

Art Unit

1792

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 9-17 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 9-17 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. ____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 09/26/2006
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

The PTOL 1449 of 09/26/2006 has been received, reviewed and considered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 9-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,363,796 A (Kobayashi, et al) in view of U.S. Patent No. 5,766,347A (Shimomura, et al).

Kobayashi, et al teaches an apparatus and method for growing a single crystal comprising multiple heaters which are arranged along the vertical direction so as to enclose the crucible, and heat shield at the outside of the heaters. The multiple heaters are separately disposed at the upper and lower portions of the periphery of the crucible, and therefore the upper and lower portions of the crucible. At least one of the heaters which includes the lowest heater is powered off in the process of pulling the single crystal. The apparatus comprises a main chamber (21), sub-chamber (22), crucible (31), a main heater (21) and a sub-heater (33) which is concentrically with crucible (31). At the outside are heaters (32 and 33) long the inner wall of the main chamber (21), upper heat shields (34 and 35), a heat shield (36) and lower heat shields 37 and 38) are placed along the inner wall of the sub-chamber (22), respectively. The main heater (32) has a pair of connecting legs (32a) through a pair of supporting members (32c) and a pair of electrodes (32d). Similarly, sub-heater (33) has a pair of connecting legs (33a and 33b) which are respectively connected to a pair of terminal electrodes (33e) and a pair of electrodes (33d). These terminal electrodes are connected to a DC power source so that the main heater (32) and sub-heater (33) are simultaneously or selectively powered on. The upper heat shields (34 and 35), heat shield (36) and lower

heat shields 37 and 38) are made of a material having a low thermal conductivity (See col. 6, lines 40-68 and col.7, lines 1-55, respectively).

The difference being that Kobayashi, et al does not teach independently supplied electrical power of each individual heater.

Shimomura, et al teaches a hollow cylindrical resistance heater which surrounds a crucible for a Czochralski apparatus comprising, a heater divided into an upper heating portion and a lower heating portion, and is provided with a plurality of vertical slits formed on the upper heating portion and the lower heating portion, respectively. The heater has two common electrodes formed on the upper heating portion and the lower heating portion and two lower heating electrodes other than the two common electrodes (See col. 2, lines 18-21). A current is supplied both between the two lower heating electrodes and between the two common electrodes. The upper heated portion can be altered to have four times the electric power of the lower heated portion. It would have been obvious to one of ordinary skill in the art to modify and optimize the the multiple heaters, as taught by Kobayashi, et al, with varying the electrical power the upper and lower heaters' electrodes in order to have independent control. The motivation being reduce the erosion of the crucible due to oxidation of the heated portions.

A reference is good not only for what it teaches by direct anticipation but also for what one of ordinary skill might reasonably infer from the teachings. In re Opprecht 12 USPQ 2d 1235, 1236 (CAFC 1989); In re Bode 193 USPQ 12; In re Lamberti 192 USPQ 278; In re Bozek 163 USPQ 545, 549 (CCPA 1969); In re Van Mater 144 USPQ

421; *In re Jacoby* 135 USPQ 317; *In re LeGrice* 133 USPQ 365; *In re Preda* 159 USPQ 342 (CCPA 1968).

2 step test for analogous art: 1) Decide if art is in the field of the inventors endeavor. 2) if not, determine if reference is reasonably pertinent to the particular problem with which the inventor was involved. *In re Deminski* 230 USPQ 313, 315 (Fed. Cir. 1986); *Stratoflex Inc. v. Aeroquip Corp.* 218 USPQ 871, 876 (CCPA 1983); *In re Wood* 202 USPQ 171, 174 (CCPA 1979).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Felisa Hiteshew whose telephone number is (571) 272-1463. The examiner can normally be reached on Mondays through Thursday from 5:30 AM to 4:00 PM with Fridays off.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Barr, can be reached on (571) 272-1414. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-1463.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system. see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private

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PAIR system, contact the Electronic Business Center (EBC) at 866- 217-9197
(toll-free).


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PRIMARY EXAMINER
A41790